

WHAT IS CLAIMED IS

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MAY 2000

1. A working fluid which is supplied to a working point where a working of a workpiece is performed with the working fluid, comprising:
  - a solvent; and
  - 10 microcapsules filled with liquid-state substances, said microcapsules being dispersed in the solvent.
- 15 2. The working fluid of claim 1, wherein said microcapsules have an average particle size ranging from  $0.1 \mu\text{m}$  to  $1000 \mu\text{m}$ .
- 20 3. A working process which performs a working of a workpiece with a working fluid, the working fluid containing a solvent and microcapsules filled with liquid-state substances, the microcapsules being dispersed in the solvent, comprising the steps

of:

supplying the working fluid to a working point of the workpiece; and

5 performing a cutting process of the workpiece at the working point while supplying the working fluid to the working point.

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4. A working process which performs a working of a workpiece with a working fluid, the working fluid containing a solvent and microcapsules filled with liquid-state substances, the microcapsules being dispersed in the solvent, comprising the steps of:

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supplying the working fluid to a working point of the workpiece; and

performing a grinding process of the workpiece at the working point while supplying the working fluid to the working point.

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5. A working process which performs a working of a workpiece with a working fluid, the working fluid containing a solvent and microcapsules filled with liquid-state substances, the

microcapsules being dispersed in the solvent, comprising the steps of:

forming a mixture of the working fluid and abrasive particles;

supplying the mixture of the working fluid and the abrasive

5 particles to a working point of the workpiece; and

performing a polishing process of the workpiece at the  
working point while supplying the mixture to the working point.

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6. A working process which performs a working of a  
workpiece with a working fluid, the working fluid containing a  
solvent and microcapsules filled with liquid-state substances, the  
15 microcapsules being dispersed in the solvent, comprising the steps  
of:

supplying the working fluid to a working point of the  
workpiece; and

20 performing a plastic deformation process of the workpiece at  
the working point while supplying the working fluid to the working  
point.

7. A method of production of a working fluid which is supplied to a working point where a working of a workpiece is performed with the working fluid, comprising the steps of:

producing microcapsules that are filled with liquid-state substances; and

mixing the microcapsules and a solvent so that the microcapsules are dispersed in the solvent to form the working fluid,

wherein, in said producing step, a process, which is selected from the group including at least a surface polymerization process, an "in situ" polymerization process, a coacervation process, an immersion hardening/coating process and an immersion drying process, is performed to produce the microcapsules filled with the liquid-state substances.

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